Claim Rejections

<u>35USC101</u>

<u>Claims 1-18</u>

Claim 1 does not recite a system that solely comprises a "function to import" and a "function to analyse". Claim 1 clearly states that the system also "processes". The result of this processing is an "electronic screen based product" which in practical terms is a training course for end users. This concept is further developed in Claims 2-18. The result of this 'processing' is most definitely "composition of matter".

The current invention is embodied in our product "Apixel Metamorphosis". The software is used by customers to automatically generate courseware for their staff and/or students. The software represents a huge time and money saving to those customers as the development process is entirely automated and then only requires cursory editing.

<u>35USC103</u>

Owens in view of Wolff does not disclose the current invention. It is wrong to conclude that independent Claim 1 relates to the automatic creation of questions as claim 1 does not refer to questions (our system only refers to automatic question generation in dependent Claim 6 and these questions are generated in an entirely different manner to Owens). Owens' system requires painstaking setting up of the source content in order that questions be generated. The key innovation of our invention is that no preparation is required – any source document is acceptable and the system automatically generates a complete course from this source. Owens' system is in no way an automated course generator. It is simply an automatic question generator and relies entirely on course content being correctly structured by the human author.

<u>Claim 1</u>

Owens' system does not disclose a system which automatically processes source documents into courseware. The current invention can process documents in any form without the need for them to be pre-prepared whereas Owens system prescribes a highly structured source document. Further to this, Owen's system is primarily designed to automatically generate questions. This is an additional feature of the proposed system, referred to in Claim 6 but is by no means the central focus of the system nor is the method of question generation or the resulting questions themselves in any way similar to that of Owens.

Wolff's system does not disclose the method of associating text analysis with image metadata. Wolff's system does something entirely different. It is a system for determining the relative placement for subsequent images based on the placement region of a first image. The examiner refers to "the image to text matching in Wolf(sic)" however, no image to text matching is disclosed by Wolff.

It would not have been obvious to one having ordinary skill in the art to come up with the proposed invention because combining Owens' and Wolff's system would simply result in a system which enabled the automatic creation of questions based on pre-prepared source documents with a system which automatically determines the placement of images. It would not result in a system which automates the development of courseware.

The reason why the present invention is not obvious is because all previous authoring systems including that of Owens and Wolff have begun with the assumption that a human author must carefully allocate content whether text or images in order to build courseware. Most of these systems focus on the need to make authoring of content on a screen-by-screen basis easier. The present invention is a paradigm shift from these systems because the application itself replaces these manual procedures. To use the present invention, the author does not have to mark up or structure the source document in any way. The table below shows how the proposed system undertakes the tasks which are normally taken on by a human author. The present invention is compared to both conventional authoring systems and newer Rapid ELearning (REL) systems. With the present invention the only task left for the human author is to *Review and edit authored lesson*.

Phase	Conventional systems	REL systems	Present invention
Content automatically processed from unstructured source documents			✓
Design user interface		✓	✓
Design screen templates		✓	✓
Allocate text on each screen			✓
Select and allocate other media on each screen			✓
Design and specify learning activities			✓
Program learning activities		✓	✓
Review and edit authored lesson			
Management of user			✓

data and results			
Publish lesson for delivery platform	✓	✓	✓
Test functionality of published lesson		✓	✓

Claim 2

Owens does not disclose this claim as firstly, it is a dependant claim based on a fully automated system which, as I have established above, Owens does not disclose, and secondly, this claim refers to source document media (such as images, video and audio files) being incorporated by the proposed system to the resulting courseware screens. Owens' system only describes the structure that a text document must have in order to generate questions automatically. Owens does not deal with other source document media.

Claim 7

Again Owens does not disclose this claim as it is a dependant claim based on a fully automated system which, as I have established above, Owens does not disclose.

Claim 8

Again Owens does not disclose this claim as it is a dependant claim based on a fully automated system which, as I have established, above Owens does not disclose.

Claim 9

Again Owens does not disclose this claim as it is a dependant claim based on a fully automated system which, as I have established, above Owens does not disclose.

Claim 10

Again Owens does not disclose this claim as it is a dependant claim based on a fully automated system which, as I have established, above Owens does not disclose.

Claim 11

Again Owens does not disclose this claim as it is a dependant claim based on a fully automated system which, as I have established, above Owens does not disclose.

Claim 12

Again Owens does not disclose this claim as it is a dependant claim based on a fully automated system which, as I have established above, Owens does not disclose.

Claim 14

Again Owens does not disclose this claim as it is a dependant claim based on a fully automated system which, as I have established above, Owens does not disclose.

Claim 15

Again Owens does not disclose this claim as it is a dependant claim based on a fully automated system which, as I have established above, Owens does not disclose.

Claim 17

Again Owens does not disclose this claim as it is a dependant claim based on a fully automated system which, as I have established above, Owens does not disclose.

Claim 18

Again Owens does not disclose this claim as it is a dependant claim based on a fully automated system which, as I have established above, Owens does not disclose.

Claim 3

Owens does not disclose a fully automated system (Claim 1) and Claim 3 is a dependant claim. Anderson does not disclose a system for generating template based courseware screens. It merely describes a system for generating standardized or semi-standardized documents – something that many software systems currently do.

Because Owens does not disclose a system for automatically generating courseware from unstructured source documents, and Wolff does not disclose a system for automatically matching source document text with image metadata, and Anderson does not disclose a system for generating template based courseware screens, the combination of their systems would not obviously lead to one having ordinary skill in the art to come up with the proposed invention.

Claim 4

Anderson does not disclose this claim as it is a dependant claim based on a fully automated system which, as I have established above, Owens does not disclose.

Claim 5

Again, Anderson does not disclose this claim as it is a dependant claim based on a fully automated system which, as I have established above, Owens does not disclose.

Claim 6

Owens does not disclose a fully automated system (Claim 1) and Claim 6 is a dependant claim.

Coniam's paper discussing Computer Cloze-Test Generator is irrelevant to the present invention firstly because it generates multiple choice type questions based on word frequency which our invention does not and secondly because it is not presented in the context of a totally automated

course creation solution. We are not claiming that cloze activities have never been automatically generated. We are claiming that they have never been automatically generated as part of a completely automated course generation system. The focus of Coniam's paper relates to word frequency. The present invention does not use word frequency at all to generate cloze activities. Instead,

"These are cloze type questions where the system displays a predetermined instruction on the created screen, together with the paragraph from the source document wherein a predetermined number of words have been omitted and scrambled such that the tutorial student is required to position them in the correct location by 'dragging and dropping'."

It would not have been obvious to one having ordinary skill in the art to come up with the present invention because Owens does not disclose a system for automatically generating courseware from unstructured source documents, and Wolff does not disclose a system for automatically matching source document text with image metadata and Coniam does not disclose the same method of cloze question generation.

Claim 13

Owens does not disclose a fully automated system (Claim 1) and Claim 13 is a dependant claim.

Our inclusion of Claim 13 does not suggest that our invention is unique in being SCORM compliant. The SCORM standard exists so that courseware can be made to comply. What is unique, and is the reason why Claim 13 has been included, is that a fully automated generation process is proposed in order to produce SCORM compliant software. Doty does not disclose this and nor does Owens and Wolff.

It would not have been obvious to one having ordinary skill in the art to come up with the present invention because Owens does not disclose a system for automatically generating courseware from unstructured source documents, and Wolff does not disclose a system for automatically matching source document text with image metadata and Doty only uses a standard that most other learning development systems use.

Claim 16

Again Owens does not disclose this claim as it is a dependant claim based on a fully automated system which, as I have established above, Owens does not disclose.

General Notes on Owens

Owens' system has been primarily conceptualised to address Owens' perception of the shortcomings of standardised testing. The aim of the invention is to produce individualised instruction and testing for the student. That is, question generation on the fly during runtime. Conversely, the proposed invention produces standardised courseware but does so automatically.

Owens states that "it would be an advancement in the art to have a method which reduces the effort required to develop test questions". He goes on to describe a system for doing so which requires the "author to provide contextual relations of the underlying subject matter". The system requires the author to "take a pool of relevant data and organize it for presentation to a user". No such 'organization' is required with the proposed invention. Owens' author must also manually cross relate items in contextual relationships – the "instructor specifies the conceptual relations among associated items". The fundamental aim of Owens' invention is to create automatically generated context based multiple choice questions. Again, the proposed system does not aim to do this. In the proposed system, any multiple choice questions should be included by the author in the source document which is converted into courseware. The proposed system does have the ability to automatically generate learning activities but these are just simple non-muliple-choice cloze activities. They are basic missing word activities where the user must identify the proper location of the scrambled missing words.

The Owens system is also database driven - drawing content dynamically from that stored in a database. The proposed system does not utilise a database for course creation or delivery.

In summary, the Owens system requires a significant amount of author effort working within the authoring system in order to have the system produce a courseware module which allows for a high degree of individualisation and dynamic question creation. The proposed invention on the other hand allows for the automatic generation of courseware modules without the necessity for any author input other than providing the core content in the basic form of a document which does not require any marking up. The end product is also fundamentally different with the courseware module produced by the proposed invention being for all intents and purposes the same as those produced by conventional authoring systems which are not automated. That is the completed courseware module will consist of both pre-defined presentation screens and interactive questions. Apart from randomisation features all candidates will be presented with the same instructional experience.

General notes on Doty

Like Doty, the proposed invention allows for the development of courseware which can be used on a SCORM compliant platform. The inclusion of Claim 13 does not suggest that our invention is unique in being SCORM compliant. The SCORM standard exists so that courseware can be made to comply. What is unique, and is the reason why Claim 13 has been included, is that a fully automated generation process is proposed in order to produce SCORM compliant software. Doty does not disclose this and nor does Owens and Wolff.

General notes on Diesel

Diesels invention is not relevant to the current invention as it does not relate to the development of the interactive presentations but rather to how they are deployed from a server and in particular to how a priority scheme and pre-loading engine can result in smoother delivery. The current invention does not address these issues but instead the focus is on the automated creation of the courseware or interactive presentations. The actual server-based deployment or otherwise is not specifically, in its own right, claimed to be unique or inventive.

General notes on Wolff

Wolff's method is for automatically determining the placement of multiple images on a screen. It is a system for determining the relative placement for subsequent images based on the placement region of a first image. Unlike the present invention, it is not a system for determining what image should be placed on the screen. In fact, the present invention does not dynamically position multiple images. Image placement is fixed and template based in the present invention. What makes the present invention unique and novel is that the actual image chosen by the system is determined by analysing the nature of the text which ultimately accompanies it. It automates what is normally a human task: to read text and then determine an appropriate image to illustrate what is being discussed in that text. Wolff's claims are not in any way concerned with what images are to be chosen – they are only concerned with the placement of images. The examiner refers to "the image to text matching in Wolf(sic)" however, no image to text matching is disclosed by Wolff.

General notes on Anderson

Anderson's system is designed to generate and process standardized and semi-standardized documents. The current invention does not generate documents and does not require source documents to be standardized in any particular way. The current invention does allow users to have greater control by embedding manual page breaks and heading styles in their source documents (Claims 4 and 5). Anderson does not disclose this, however, because these claims are dependent on Claim 1 which specifies a system which automatically generates electronic courseware with automatically generated matching images. The process of searching for various embedded elements such as page breaks or heading styles is neither unique to Anderson's system nor the present invention. It is the context of using such an approach that makes it novel. In the case of the present invention, the use of such embedded elements can further enhance the automated system described in Claim 1. Most of Anderson's description of their system relates to comparing more than one document in order to determine similarities and differences in the context of a standardized form. The concept of a standardized document is not required in the present invention nor are more than one document ever compared with one another.